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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Shigeki Fujii

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02/09/2006

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EXAMINER

LAO, LUN S

ART UNIT

PAPER NUMBER

2644

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/595,655

Applicant(s)

FUJII, SHIGEKI

Examiner

Lun-See Lao

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. This action is response to the amendment filed on 10-31-2005. Claims 1, 6 and 13 have been amended and claims 4-5 have been cancelled and claims 17-19 have been added. Claims 1-19 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 6-14 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaudrey (US PAT. 6,985,594) in view of Choi (US PAT. 6,587,565).

Consider claim 6, Vaudrey teaches that a sound processing apparatus comprising: a signal separator (see fig.2, (309)) that separates an input audio signal of at least one system into a plurality of separated signal components (310,311) corresponding respectively to a plurality of different types of sound sources (310,311), the input audio signal containing an ambient sound component (such as, back ground audio) and an on-the-spot speech sound component (such as, voice audio) and at least part of the plurality of separated signal components including the ambient sound component (such as, back ground audio) and the on-the-speech sound component (such as, voice audio and see col. 9 line 49-col. 10 line 10);

a sound processor (see fig.2) that subjects each of the ambient sound component (such as, back ground audio) and the on-the-spot speech component (such as, voice audio) of the at least part of the plurality of separated signal components (310,311) to individual sound processing suitable for the signal component, the sound processing on the ambient sound component (such as, back ground audio)

including sound field control processing (310,311 and 315) for creating an impression of a sound with a presence (see col. 9 line 49-col. 10 line 10); but Vaudrey does not clearly teach the sound processing for creating a spatial impression of a sound with a presence; and an output controller that outputs the plurality of separated signal components as at least one audio signal after each signal component of the at least part thereof is subjected to the individual sound processing.

However, Choi teaches that the sound processing on the ambient sound component including sound field control processing for creating a spatial impression of a sound with a presence (see fig. 1); and an output controller (70,80) that outputs the plurality of separated signal components (R-OUT and L-OUT) as at least one audio signal after each signal component of the at least part thereof is subjected to the individual sound processing (see col. 3 line 52-col.5 line 35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Choi into Vaudrey provide a system for improving a spatial effect of stereo sound or encoded sound, by which the loss of the original sound can be restricted to a minimum and the sense of three dimensional sound image in the reproduced sound may be improved.

Art Unit: 2644

As to claim 1, there is the method claim corresponding to apparatus claim 6. See previous apparatus claim 6 rejection.

Consider claims 7-8, Choi teaches a sound processing apparatus of the output controller (see fig. 1 (70,80)) synthesizes the plurality of separated signal components (such as L", L', L and R",R',R) with the at least part thereof subjected to the individual sound processing into a synthesized audio signal, and outputs the synthesized audio signal (col.4 line 51-col. 6 line 31); and a sound processing apparatus of the output controller (see fig.1 (70,80)) outputs the plurality of separated signal components (such as L", L', L and R",R',R) with the at least part thereof subjected to the individual sound processing, separately as audio signals(see fig.1(L-out and R-out) and (col.4 line 51-col. 6 line 31)).

As to claims 2-3 and 18-19, these are method claims of claims 7-8 respectively. Thus note claims 7-8, respectively for rejection.

Consider claim 9, Choi teaches that a sound processing apparatus (see fig.1), wherein said signal separator performs spectrum analysis upon said input audio signal to extract a specific signal component (such as L' and R'), and subtracts the extracted specific signal component (such as L' and R'),from the input audio signal (L-in and R-in) to obtain a remaining signal component of the input audio signal (see col. 4 line 16-col. 5 line 35).

Consider claims 10-11, Vaudrey teaches that a sound processing apparatus of the signal separator (see fig.2, 309) comprises a plurality of signal enhancement/suppression devices (such as, gain adjustment (310,311)) that enhance

Art Unit: 2644

part of a plurality of signal components (such as, background audio and voice audio) contained in said input audio signal (307 , 308), and suppress remaining signal components (such as, voice audio, background audio and see col. 9 line 49-col. 10 line 10); and a sound processing apparatus (see fig. 2) of the input audio signal (307, 308) comprises audio signals of a plurality of channels (such as, background audio and voice audio), and said signal separator (see fig.2, 309) comprises a plurality of signal separators (310,311) corresponding respectively to said plurality of channels (such as, background audio and voice audio), and wherein each of said plurality of signal separators (310,311) performs predetermined sound processing by supplementarily referring to at least one of the audio signals of at least one other channels than a channel corresponding thereto, thereby improving accuracy of separation of the input audio signal (307,308) of the corresponding channel into a plurality of separated signal components (such as, voice audio, background audio and see col. 9 line 49-col. 10 line 10).

Consider claims 12-14, Vaudrey teaches a sound processing apparatus , wherein said sound processor (see fig.2) comprises a sound field controller (310,311,315) that performs sound field control processing upon each signal component of the at least part of the plurality of separated signal components (such as, voice audio, background audio and see col. 9 line 49-col. 10 line 10); and a sound processing apparatus of the sound processor selectively eliminates (see fig.2, 309)) at least part of the plurality of separated signal components (such as, voice audio, background audio and see col. 9 line 49-col. 10 line 10), and instead uses an externally input audio signal (fig. 2, (307,

Art Unit: 2644

308) and col. 9 line 49-col. 10 line 10); and a sound processing apparatus (see fig.2) of the sound processor changes (9) sound quality or voice quality of each signal component of at least part of the plurality of separated signal components (fig. 2 (310,311) and col. 9 line 49-col. 10 line 10).

Consider claim 16, Choi teaches that a sound processing apparatus (see fig.1) of the sound processor changes speed relative to a time axis or speech speed of each signal component of at least part of the plurality of separated signal components (see figs. 1-3b, and col. 4 line 51-col. 6 line 32).

Consider claim 17, Vaudrey teaches that a sound processing method comprising the steps of:

Separating (see fig.2, (309)) an input audio signal of at least one system into a plurality of separated signal components (310,311) corresponding respectively to a plurality of different types of sound sources, the input audio signal (307,308) containing an ambient sound component (such as, back ground audio) and an on-the-spot speech sound component (such as, voice audio), and at least part of the plurality of the separated signal components (310,311) including the ambient sound component (such as, back ground audio) and the on-the-spot speech component (such as, voice audio), subjecting the ambient sound component (such as, back ground audio) to individual sound processing suitable for the signal component, the sound processing of the ambient sound component (such as, back ground audio) including sound field control processing for creating an impression of sound with a presence (see col. 9 line 49-col. 10 line 10); but Vaudrey does not clearly teach the sound processing for creating a

Art Unit: 2644

spatial impression of a sound with a presence; and an output controller that outputs the plurality of separated signal components as at least one audio signal after each signal component of the at least part thereof is subjected to the individual sound processing.

However, Choi teaches that the sound processing on the ambient sound component including sound field control processing for creating a spatial impression of a sound with a presence (see fig. 1); and an output controller (70,80) that outputs the plurality of separated signal components (R-OUT and L-OUT) as at least one audio signal after each signal component of the at least part thereof is subjected to the individual sound processing (see col. 3 line 52-col.5 line 35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Choi into Vaudrey provide a system for improving a spatial effect of stereo sound or encoded sound, by which the loss of the original sound can be restricted to a minimum and the sense of three dimensional sound image in the reproduced sound may be improved.

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vaudrey (US PAT. 6,985,594) as modified by Choi (US PAT.6,587,565) as applied to claim 6 above, and further in view of Tubman (US PAT. 5,569,038).

Consider claim 15, Vaudrey teaches that a sound processing apparatus as of the sound processor comprises the at least part of the plurality of separated signal components (fig. 2 and col. 9 line 49-col. 10 line 10); but Tateishi does not clearly teach a sound processor changes pitch of each signal component.

Art Unit: 2644

However, Tubman teaches a sound processing apparatus (see fig.1,8) of the sound processor changes pitch (by console) of each signal components (see col.10 line 1-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Tubman into the teaching of Vaudrey and Choi to provide an acoustical prompt to the Karaoke participant.

Response to Arguments

5. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2644

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yokoyama (US PAT. 6,360,199) is recited to show other related the sound processor.

8. Any response to this action should be mailed to:

Mail Stop ____ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:

(703) 872-9306

Hand-delivered responses should be brought to:

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao,Lun-See L.S.
Patent Examiner
US Patent and Trademark Office
Knox
571-272-7501


HUYEN LE
PRIMARY EXAMINER

Application/Control Number: 09/595,655

Page 10

Art Unit: 2644

Date 02-01-2006